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☞See advertisement on last page.

Poetry.

LABOR WORSHIP.

BY EDWARD YOUL.

Brother kneeling late and early,
Never working—Praying ever—
Up, and labor—Work is prayer,
Worship is in best endeavor.

Days and nights not given to service
Turn thy life to sinful waste;
Be no laggard—be no sluggard—
Live not like a man disgraced.

See—Creation never resteth,
Even God creates anew;
To be like Him, is to labor,
To adore him is to do.

Do thy best and do it bravely,
Never flag with under zeal,—
This is writ as Scripture Holy,
Thou must either work or steal

None have mandate to be idle,
Folded hands are vilest crime;
God's command is labor-worship,
In thy youth and in thy prime.

For I preach the newest Gospel—
Work with Hand, and work with Heart;
Work—the Heavens are working alway;
Nature reads a text of Art.

Suns become the sires of Systems,
Planets labor as they roll;
And the law of their Celestial,
Is a law within thy soul.

From thy nerves, at each pulsation—
From the mystery of sleep—
Comes a lesson—a monition,
Whose significance is deep.

Rightly read, and fitly heeded,
It will whisper to thy breast—
"Thou art clothed around with beauty,
And an angel is thy guest."

But the beauty worketh, striveth,
And is leading thee apace,
To a future whose foundations
God hath planted not in space.

Oh, the angel—How he helpeth!
Hinder ant by act of thine;
Lagging limbs or heart aweary,
Mar the work of the Divine.

Be a workman, O my brother,
Higher worship is there none;
With its hymn of work-devotion,
Nature is one choral tone.

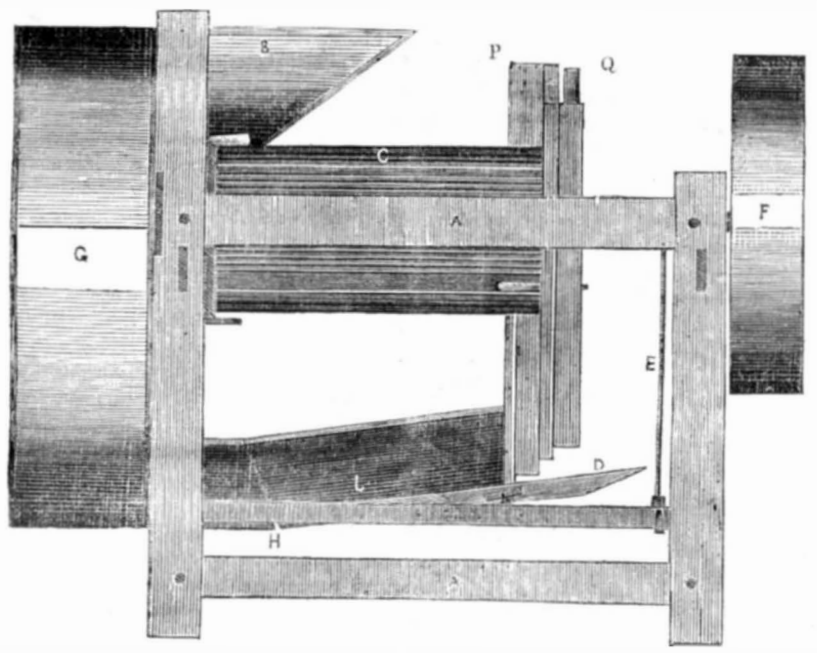
Ever idleness blasphemeth
In its prayer—in its praise,
How shall Heaven accept his incense,
Who is idle all his days?

Ever working—ever doing—
Nature's law in space of time,
See thou heed it in thy worship;
Build thou up a life sublime.

Everywhere the earth is hallowed
Temples rise on every soil—
In the forest—in the city—
And then priest is Daily Toil.

PEASE'S BUCKWHEAT AND OTHER GRAIN SEPARATO

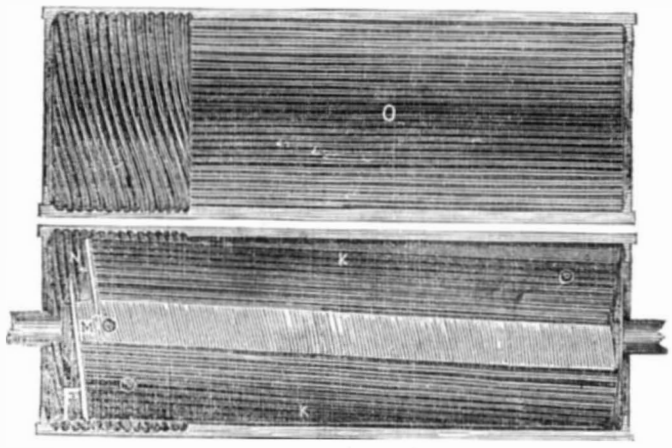
Figure 1.



This machine is the invention of Mr. Daniel Pease, of Floyd, Oneida Co. this State, and is patented. It is very simple in its construction, and is excellent in its arrangements, accomplishing all that it proposes to do in a most beautiful manner. It is a machine of but small dimensions, yet it has cleaned twenty bushels of buckwheat in one hour, and the wheat so cleaned was the handsomest article of the kind we ever looked upon. It almost resembled in cleanness, Bentz's famous hulled wheat.

Figure 1 is a side elevation. A, is the frame. B, is the hopper into which the uncleaned buckwheat is placed and is conveyed into a cylinder C, in the interior of which is placed a spiral revolving screw shaft which is turned by a band passing round the large pulley F. The shaft revolved by the pulley F, passes through the centre of G, the fanners or windmill. *l*, is the screen upon which the grain falls out of the cylinder at D, and being carried down the incline is operated on by the fanners, and the dust, &c. blown out, while the grain escapes into the receiver or granary at H, perfectly cleaned. E, is a rod to raise or lower the screens.

Figure 2.



This is a sectional view of the cylinder O, into which the buckwheat passes, and is driven or forced through small grooves K K, which rubs off all the dirt, &c. in the most admirable manner. It will be seen that this cut represents the two halves of the cleaning cylinder and exhibits the interior arrangement.—The buckwheat falls through the hopper B, fig. 1, into this cylinder on M, which are spiral flanges fixed on the shaft. These spiral flanges when the shaft is turned drive the buckwheat into the spiral grooves N, with great force and as they are inclined or twisted towards the right end of the cylinder the buckwheat is thus driven out through the grooves K K, and up a canal P, then falls down another upon the screen. The orifice of the discharge canal is regulated by a handle Q, to vary the force required in cleaning different kinds of grain It will be observed that this process of cleaning grain is very simple and very efficient, and makes a very excellent separator of fine grains especially. A working machine may be seen at Mr. Hill's Agricultural Warehouse, No. 43 Fulton street, this City, and more information may be obtained about it by communicating with Mr. Pease who will sell rights and machines.

Metallic Evaporization.

Many liquids only remain fluid by the weight of the air, as ether and alcohol, which evaporate very readily in a vacuum; so heavy a fluid as mercury even evaporates slowly. A number of shoemakers were known to become salivated from inhaling the vapor of mercury in a room which had been occupied twenty years before as a looking-glass factory.

Bricks should be well soaked immediately before laying them. A wall twelve inches thick, built of good mortar, and brick well soaked, is stronger in every respect than one sixteen inches thick, built with dry bricks.

A mine of copper ore has been discovered in Carlisle, Massachusetts, near the road leading to Concord.

RAIL ROAD NEWS.

Improvement on the Boston and Stonington Railroad.

There has recently been added a refrigerator car, for the purpose of transporting butter cheese, oysters, &c., to arrive in this city between 9 and 10 A. M., bringing them in a cool and fresh state. There is also attached to the steamboat train a fruit car, in charge of a special messenger, which arrives at about 4 o'clock A. M.

Pennsylvania Line.

A new rail road is proposed to be constructed to the Great Mahomy Coal fields of Penn. from Coal Castle. The road will cross broad mountain at the gap of Rattling Run, without any inclined planes, and with a maximum grade of 80 feet per mile, being that used on some of the principal rail roads in our country. It is proposed to extend the line for a passenger thoroughfare, eastwardly to Pottsville, and westwardly, via Shamokin, to Sanbury, so as to make it a part of a line from Philadelphia to the northern counties of Pensylvania, and to Lake Erie.

The Lehigh Coal and Navigation Company on the 15th inst. placed locomotive engines for the first time upon their railroad, connecting the Susquehanna and North Branch Canal at Wilkesbarre, with their works upon the Lehigh, at White Haven. A goodly company celebrated the event.

A meeting is to be held in Toronto, Canada, on Wednesday next, to consider the propriety of taking immediate steps for raising the necessary funds for making a railroad between Toronto and Lake Huron, and for commencing a proper railway communication from Toronto to the leading points in other directions.

A Speaking Telegraph.

There is a genius of a telegrapher, named Rufus Chadwick, at the office in Peoria, Illinois. The Gem of the Prairie, says that they communicate by sound only. The messages are received with the ends of the wires on the operator's tongue, which talks somewhat Christian like, but we are afraid that the sermon will have to be very short and as for a President's Message we would pity the poor fellow of a telegrapher that would receive such an instrument all on *his tongue*.

Overflowing Wells.

There are three wells at Waukau, in Wisconsin, which discharge fine little rivulets from their surface. They measure 23, 30 and 54 feet in depth—soil, red marl. These wells discharge double the amount when the wind is South, than they do when the wind is North. The water in other wells in that vicinity will rise a foot on the wind blowing a good breeze from the South. As Rush Lake is within three miles and on high ground, it is probably the source from which the wells are supplied, and a strong wind driving upon the coarse sands of the beach increases the discharge of water through the sand into channels which find vent in these wells.

Minerals of Indiana.

Indiana is known to contain a variety of minerals in many places, and every year new discoveries add to the general list. Coal is known to abound largely along the Ohio and Wabash, and some of the streams of the interior, and the county of Vermillion has inexhaustible beds of iron ore already in use; evidences of lead have been discovered, and plumbago has been found on the Wabash, as well as quarries of marble of a very good quality and susceptible of a very fine polish.—Some good specimens of copper ore have lately been found at Vertigo. Beds of red chalk are found in some parts and there is plenty of minerals of all kinds to make it a great State.

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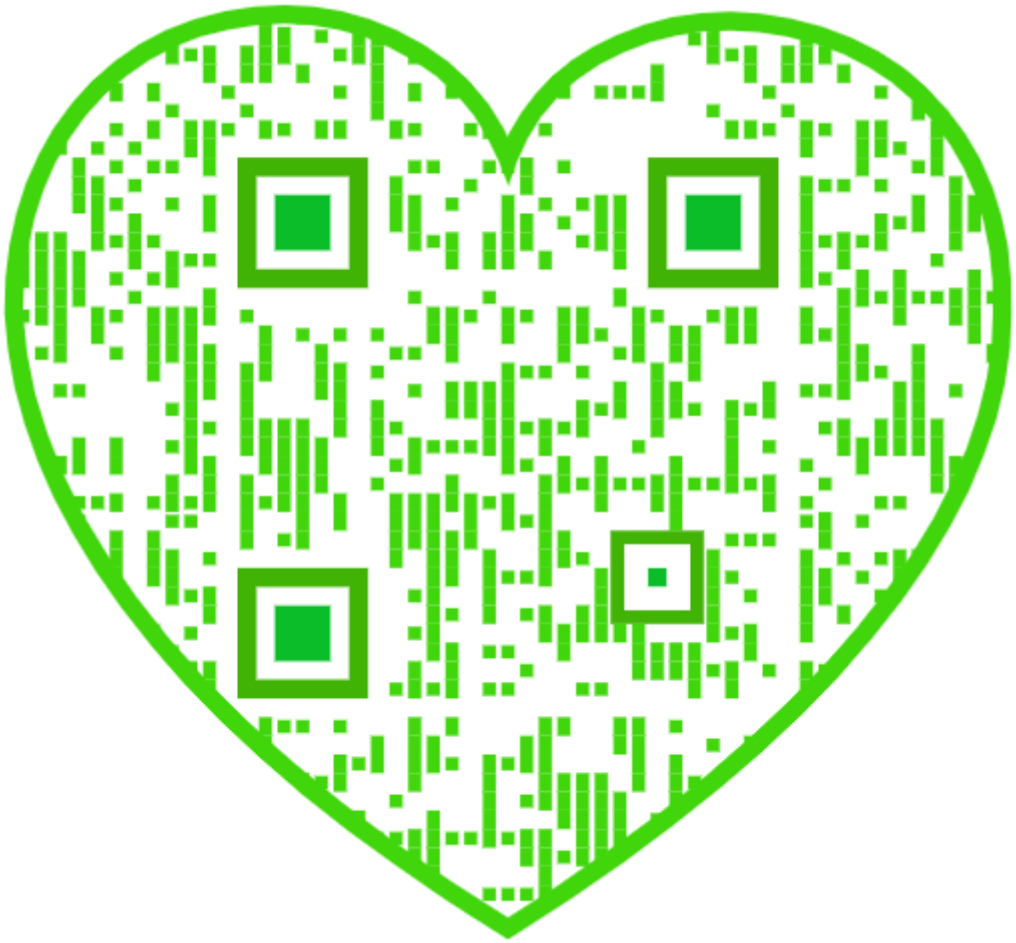

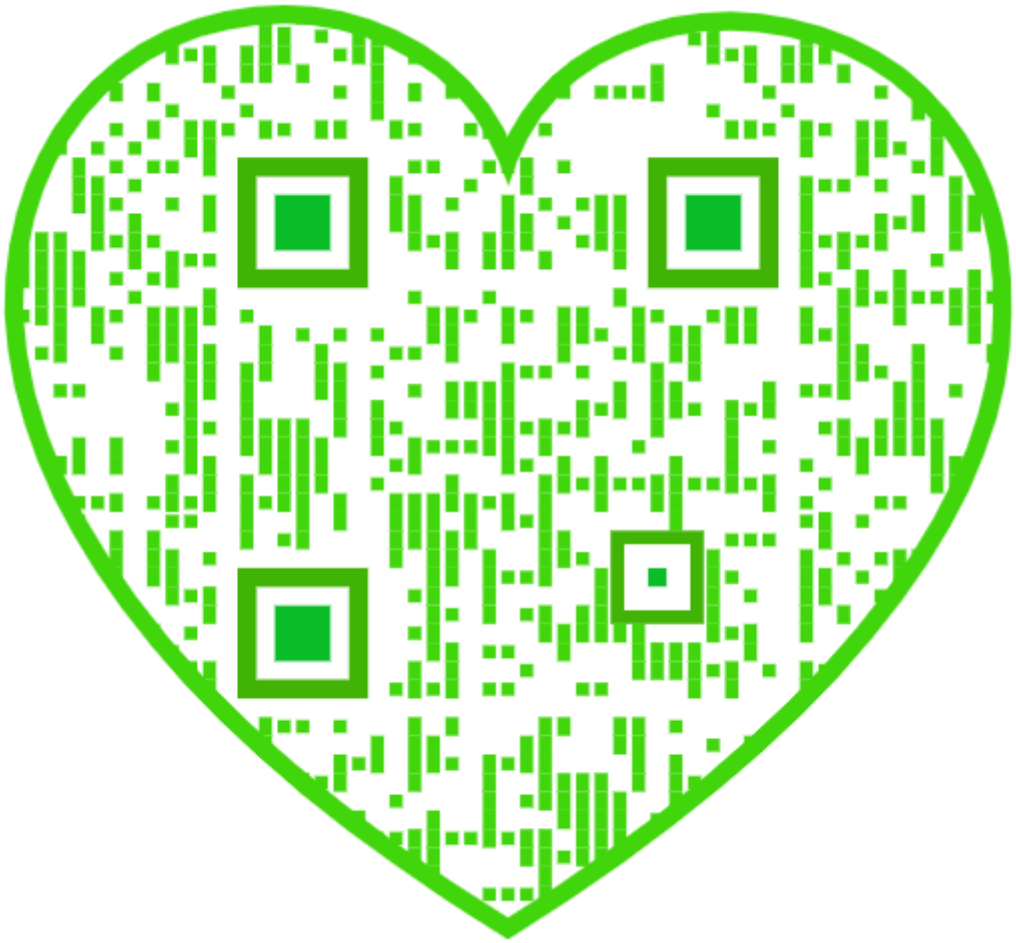

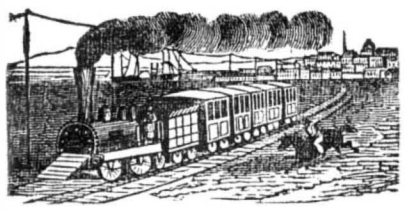

Manufacture of Silk in the United States.

It is difficult to realize that a description of manufactures such as silks, made thus far only upon a small scale, can rise to an equality of value and importance to the woolen or cotton fabric of the United States.

But those who are familiar with the silk interest do not hesitate to say, that we shall in the lapse of a few years not only become independent of Europe and Asia for a supply of silk goods, but will fabricate a supply for foreign markets.

This conclusion results from the circumstance that the raw material is admirably adapted to our climate, and is produced in fact of a better quality than in any other country on the globe, affording sewing silks superior to the best imported articles.

But let us turn to late statistics on the subject. Of manufactories of sewing silk there are in

Connecticut	9	45,200 lbs.
Massachusetts	2	12,500 "
New York	1	2,500 "
New Jersey	1	10,000 "
Pennsylvania	1	3,000 "
Kentucky	1	1,500 "
	15	74,700 "

Besides these are fabrics of silks, such as handkerchiefs, cravats, and vestings made at Economy, Pa., Mount Pleasant, Ohio, and Richmond, Ia.

The business is in its infancy, but it has progressed thus far in the face of great difficulties and discouragements New establishments are adding every year, and the old ones are enlarging their operations.

The value of this branch of business is now more than half a million of dollars, but this is only the beginning of its importance and value as an industrial pursuit.

The value of silk imported into the United States is from 15 to $20,000,000 per annum, and this sum must increase rapidly unless the demand is in part supplied by home products Experience, as we said before, has proved that Kentucky is the centre of as fine a silk growing region as there is in the world. We have seen fabrics manufactured from silk produced in Kentucky and Ohio, that equal the products of any country in the old world, and Connecticut, Massachusetts, and New Jersey, silk is not surpassed. At present silk goods are cheap because it is well known that hundreds of French manufacturers have sold out at great sacrifices to turn their goods into money, and leave France. But there's a good time coming, boys !

Caterpillars.

These creatures are more easily destroyed han any species of worms that infest our trees. Yet we often find whole orchards robbed entirely of their leaves in June. The conical brush is the best for high trees, but this should be used while the nests are small in order to prove effectual. A rubbing with this brush soon after the hatching of the worms destroys them. But we neglect to attack them in season, for they make their appearance always when we are busy in planting.

Nature has been very careful to preserve the caterpillar from starvation, for the worm never hatches till the weather becomes warm enough to bring forth the leaf of the apple, and the cherry tree. If the eggs would go by the almanac and hatch in a certain number of days, as hens' eggs do, without regard to the heat of the weather, we should stand a good chance of being entirely rid of them in time—for in late seasons they would starve before the leaves appear.

The Sugar Crop.

The Franklin (La.) Banner, of the 8th inst. states that a large quantity of the seed cane, put up in the river parishes this season, rotted in the mattress, and the crops of many planters will in consequence be short one half.

Glass.

Glass was for a long time believed to be a modern invention. Within fifty years, four quarto volumes were written to prove—in opposition to that of Pliny—that the article was unknown to the ancients; and on the very day that these volumes were published a ware-house was opened in Pompeii, filled with cut, wrought, pressed and stained glass far more beautiful and perfect than are now manufactured. There is glass found, too, among the remains of Central America. In the Museum of Florence, is to be seen a piece of glass, which was long supposed to be a gem an inch square by a quarter of an inch thick, on which was represented birds which could be seen equally well on both sides, and their plumage so perfect that the microscope shows in it no fault or want of finish; and though it is apparently a mosaic it is impossible to detect where or how it is put together. The art of making them so is not now known, and we cannot even imagine how it could be done —Pliny tells of a drink glass which could be folded up so as to occupy a small space, and which was destroyed and kept a secret by its inventor, because his monarch would not offer him what he considered a sufficient sum for his invention. The moderns with all their arts, cannot equal the beautiful stained glass of the middle ages, inferior as this was to that of Egypt.

Advertising for a Wife.

Some fellow has been advertising for a wife in some of our city papers, as follows:—A gentleman of thirty-five, possessed of a superior education, and more than ordinary kind and affectionate natural temperament, would be happy to marry a worthy girl of fair personal appearance, sound health and respectable education, seventeen to twenty-five years of age. A lady possessed of some property preferred. For farther acquaintance address E. C. L. box No. 1,933, Post Office.

E. C. L. means "Extraordinary Case of Lunacy."

Frightened Black.

A most singular instance of terror is recorded in the Journal de Medicine, Salt-petriere. A female of advanced age, was so affected with horror on hearing that her daughter with two children in her arms, had precipitated herself out of a window, and were killed on the spot, that her skin, in a single night from head to foot, became as black as that of a negro. The same passion turns the hair white, of which many instances are now on record.

Cheap Postage.

It is stated that the provinces of Canada, Nova Scotia and New Brunswick are about to combine together and fix the rate of postage to and from the different parts of those countries, at a uniform rate of postage.

All Stopped

All the Bagging Factories in the Western country have stopped—according to written agreements among themselves—for sixty days. The cause of this is the overplus of bagging in the market and the high price of hemp.

Scientific Darkee Trick.

The negroes of the West Indies have a method of stealing rum, which involves the principles of pneumatics. They take a bottle filled with water, and invert it, placing the neck in the bung hole of the barrel so as to touch the liquor—the water being the heaviest sinks into the liquor, leaving a vacuum in the bottles, which is then filled with the liquor forced up by the atmospheric pressure.

Cotton Thread Factory.

The Marietta Advocate, Geo., says, that there is a factory on the Nick-a-jack, a few miles from Marietta, where cotton thread of a most excellent quality is now manufactured.

Sensible.

A maiden lady of forty, in reply the ironical question, why she did not enter into the holy state of matrimony, said—"Why, by waiting I may get one of the best of husbands and if I get a bad one, I shall have reason to rejoice that I have not got long to live with him."

Novel Travelling Machine.

An ingenious mechanic of this city, has invented a machine for travelling, which was tried here recently. It started from Great Ancoats Street, and proceeded through Port Street and Stevenson Square into Picadilly; and from thence down Mosely Street, Peter Street, Ceansgate, and back again up Market Street to Ancoats. The carriage was stopped every now and then to allow parties to inspect the movement of the machine, the working which appeared to cause the driver only a slight muscular effort, aided by manual dexterity. The machine weighs eight hundred weight, has no cranks, and has been worked by one man up an incline of three inches in the yard, while twelve persons were in it. A skillful driver can make it go at a comfortably rapid rate.—*Manchester Examiner.*

This is nothing more nor less than the old steam coach. We have seen more than one of them in operation before, and going at the rate of 8 miles an hour on a McAdamized road. They would be excellent for our plank roads, but not so cheap as horse power in some districts, nor so safe either, unless the air engine was employed. By the bye, why is it that some of our mechanics do not fit up an air engine on Stirling's principle. If it would do for a locomotive it would need to carry no water, and certainly a very great expense would thus be saved, in working the tender.

Progress.

Lightning and steam have not only superseded horse-power on land, and wind on the water, but with as astonishing a revolution they have quickened the human brain, until the ideas of the age are equally more rapid than those of half a generation ago, as are the means of transmitting them from brain to brain the world over. In the day of wooden ploughs (not long since) the great danger was in going too fast and knowing too much—now the difficulty is to go fast enough, and know enough. The fear, so groundless with our good old fathers, that new ideas, new inventions and enterprises were dangerous to the welfare, virtue and peace of society, is completely extinguished. Men have found out the essential secret of prosperity and greatness that all progress is the work of experiment, and the result of experiments, in spite of the old stand still philosophy, has sharpened them to go on experimenting more and everywhere, in all fields, paths and professions. Thus they have curbed and saddled steam, tamed lightning, cast by wooden ploughs, and in a thousand ways advanced and exalted themselves, physically and mentally, as individuals and in nations.

League of Universal Brotherhood.

There was to be an important meeting of this League on the 27th ult., in Paris. Delegates having been appointed from Great Britain, and several other European nations, the occasion was, without doubt, one of great interest. It was the first meeting of the kind ever held in France, and in this particular crisis of that country's history, will have a moral influence which must tell most favorably on the cause of Peace. At a late meeting of the American Branch of the League there were several delegates appointed, and among others, Elihu Burritt—and Henry Clapp.

Opinions of our Ancestors.

We learn from Barclay's English Dictionary, that in the reign of Edward II, there was the most terrible earthquake that had ever been felt in England, and a dreadful famine which lasted three years, and destroyed a vast number of people. During this time the brewing of any sort of beer was prohibited, on pain of death, that the corn which used to be consumed that way might be applied in the making of bread. How greatly would England have been benefitted, had these laws been continued and enforced to the present time.

The principal production of silver is in Mexico, which annually sends abroad some $12,000,000. The restoration of peace, together with the admixture of a little Yankee enterprize, may perhaps, considerably increase this amount in future.

Wash for Buildings.

Take six quarts of fine lime, and one quart of clean rock salt for each gallon of water—the salt to be dissolved by boiling, and the impurities to be skimmed off. To five gallons of this mixture (salt and lime) add one pound of alum, half a pound of copperas, three-fourths of a pound of potash (the last to be added gradually,) four quarts of fine sand, or hardwood ashes. Add coloring to suit the fancy. It should be applied with a brush. It looks as well as paint, and is as lasting as slate. It stops small leaks, prevents moss from growing, and renders the work incombustible. Ashes from a blacksmith's forge will do as well as copperas. The sulphate of copper will make a bluish color, and the copperas a buff.

Flying Seeds.

The pollen of plants, on examination with a microscope, is found to consist of small globules, or balloons, filled with hydrogen gas, and being thus lighter than air, they float about until they light upon other plants of the same species, which, in a state of hybradation, are covered with a glutinous substance that holds those balloons fast, and the action of the sun bursts them and they impregnate the plant.

Kentucky Crops.

The Louisville Journal says that there have been recently copious rains in the neighborhood, and we understand that they were very general, that the corn crop has been revived, and with a good season hereafter, the crop will be a large one. The Hemp crop has also been greatly benefited in this neighborhood. That crop was, however, very much stunted by the drought, and cannot be large even with sufficient rain hereafter.

Books.

Thirty thousand volumes are added each year to the Library of the British Museum. The books already there, are sufficient to furnish each inhabitant of London with a separate library of twenty volumes. There are one hundred thousand volumes now lying unentered; and one assistant has been engaged twelve years in making a catalogue of the maps.

Population of Germany.

Germany consists of thirty-four States or Kingdoms, each having a government of its own, and fifteen provinces which have been annexed to neighboring monarchies, but still retain their nationality. The area of the whole is set down at 211,321 English miles the aggregate population at 33,000,000 or 182 to the square mile.

Hardened Villainy.

At a Floral Festival in Cincinnati for the benefit of the Orphans, several counterfeit gold pieces of the apparent value of $2,50, were passed upon the little orphan girls who kept the stands, and in each case *change* almost to the amount was given.

Diminished Prices.

A writer in Hunt's Magazine, says, when he commenced trade in this country, many years ago, he sold English chintz for 75 cents per yard, and a servant girl received for wages fifty cents per week, and paid $4 for a dress pattern; now a girl gets from one to two dollars per week, and yet can purchase a first rate article of a dress at eighteen cents per yard.

Harvest in Virginia.

The Richmond Whig says, "The wheat harvest was commenced last week in this and the neighboring counties, and it promises an extensive crop. The country presents a beautiful appearance."

The Granite Cotton Factory at Ellicott's Mills, Md., has now commenced partial operations. Fifty looms are about started. This factory is driven by water power, (Patapsco.) The building is of the best and most substantial construction, the location healthy, and promises to increase the trade and population of that romantic village, Ellicott's Mills.

A monster pine apple, weighing no less than *fifty pounds*, was received at the Philadelphia Exchange on Monday last, by a vessel from the West Indies.

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Burring, Carding and Combing Wool Machines.

The following taken from the Annual Report of Examiner Fitzgerald for the last year, will be interesting to many of our readers, —we having had frequent enquiries respecting the said machines.

Several patents have been granted within the year for improvements in burring, carding and combing wool. There has within a few years come into use a burring cylinder, composed of rings upon a shaft resembling very much the saw cylinder of a cotton gin, with inclined notches, cut at intervals, in the outer edges of the rings, thus forming teeth to hold the wool while the burrs are beaten off by a beater working nearly in contact with the cylinder. These notches in the first machine patented were formed with wide throats, wider than the opening leading to them. In consequence of this form, it is said that the wool clogs in the notches, and after being burred cannot easily be removed, and, consequently, the usefulness of the cylinder, in other respects well calculated to effect its object, is much impaired. This difficulty has been overcome by making the notches of equal width from the mouth to the throat, by which improvement the cylinder holds the wool as well as before, and at the proper time is easily cleared.

The beater used on these machines consists of a cylinder with ribs extending out from its outer surface for beating off the burrs—these ribs have been placed parallel to the axis, and have also been made to wind spirally upon its surface. To the first kind of ribs objections were made, which were removed by the second; but while this removed one evil it was said to introduce another—to obviate which, and still retain the advantages of the spiral or inclined ribs, the ribs have been placed in zig-zag directions upon the surface of the beater cylinder.

A mode of constructing these beaters—equally applicable to the straight, spiral or zig-zag ribs—has also been patented, which secures to the beater great strength and lightness.

Beaters formed like saw cylinders of cotton gins have, for some years past, been known and in use—but in these it will readily be perceived that when in operation each successive tooth follows directly in the track of the preceding—and the spaces between the teeth all come directly after each other—and, consequently, the action of the beater is not equal upon all points of the burring cylinder. To avoid this imperfection the beater cylinder has been made solid, and grooves cut into its surface spirally, so as to make it resemble a screw with sharp threads. Longitudinal grooves are then cut in the surface of the cylinder across the threads already mentioned, forming the whole surface into teeth and spaces. As the grooves around the cylinder are spiral, it is readily perceived, that each tooth as the cylinder revolves will follow the space left between the two preceding teeth, and thus the action of the beater upon the burring cylinder will be equalized. A similar improvement for feed rollers, for this kind of machinery, has been patented within the year. Other improvements in burring and carding machinery have been made, but it is unnecessary further to dwell upon them, especially as it would be difficult to render them intelligible without drawings.

The oiling of wool for carding, heretofore and still practised, however necessary, is, of course, objectionable, in consequence of its influence upon the woven fabric; and letters patent have been granted within the year, for the use of steam instead of oil, which is said to present all the advantages without any of the inconveniences of oil.

An ingenious and useful improvement in wool combing machines has also been patented. To obviate the inconveniences of other modes of construction, the comb teeth have been attached to belts and carried forward and around driving pullies or rollers. These belts owing to their flexibility, furnish an imperfect support for the teeth. To obviate these inconveniences of the belt, a series of solid inflexible blocks, following each other closely, have been substituted, travelling like the belt, except at the ends where, without turning, they are pushed forward into the field of action, or in like manner are withdrawn from it. This improvement secures the important ends of firmness and perfect parallelism of the teeth.

For the Scientific American.

Tea Drinking.

Before the introduction of tea into England wine and beer were the beverages for morning refreshment. This sort of fare continued in use, until the end of the seventeenth century, at which time tea was nearly, if not altogether unknown in Scotland. In 1664, the East India Company make a present to King Charles II, of two pounds of tea, as a great rarity; but it appears to have been partially known to the public about three or four years previous. Mr. Samuel Pepys, in his manuscript diary, in the Pepysian Library at Cambridge, says, September, 26, 1661, I sent for a cup of tea, (a China drink,) of which I had never drank before, and went away.

The introduction of coffee into England, took place prior to that of tea, but the difference of time is very trifling. It has been said that coffee was first brought into England in 1652, by Mr. Daniel Edwards, a member of the Turkish Company, and that his servant, (Pasquer a Greek,) was the first who opened a house for publicly vending it as a drink. This house was in the church yard of St. Michael, Cornhill. In 1651, one Jacob, a Jew, opened a coffee-house, at Angel, in the parish of St. Paper, in the East Oxon, and there it was, by some who delighted in *noveltie*, drank.

Tea was originally drank in the public coffee houses in London, in common with coffee chocolate, and sherbet. In proportion, as the coffee-houses were frequented, the taverns became deserted; and government, finding, a sensible diminution in the duty upon wines. judged it necessary that the deficiency should be made by a tax on the liquors consumed in the coffee-houses, by requiring the keepers of them to take out a license at the Quarter Sessions.

It was a considerable time, however, before tea became the general fashion, owing to the discordant opinions that were held with regard to its properties. Several writers insisted, that its use was attended with very injurious effects, while others as highly extolled its virtues. About the year 1673, it met with a powerful supporter in Dr. Cornelius Boutekoe, a German Physician. This gentleman, whose eminence in his profession had raised him to the situation of first physician to the Elector of Brandenburgh, entertained the highest opinion of its salutary qualities, and denied the possibility of its injuring the stomach. But we are aware, however, that there are not wanting persons at the present day, who contend that many maladies have been occasioned by the use of warm drinks. Nervous disorders are said to have become hereditary since the introduction of tea. But if any people in the world are affected in this manner, surely the Chinese would be, of all others, the most liable, and yet the evil amongst them does not appear alarming, they are a cool and quiet people. In a poem of *Kien Long*, Emperor of China, in 1746, we find that the Chinese are far from suspecting that it affects the constitution, in parts so essential as the nerves. We have no hesitation in saying, from all that we have read and heard on this subject, that tea is by no means injurious to the constitution, and we are perfectly satisfied that the morals of the people, have been greatly improved since the general use of that liquor. We incline to think that it has driven out from among us many diseases, especially the cargo that was consigned to be steeped in Boston Harbor. Our citizens have a strong liking for tea, but it must be untaxed. Taxed tea was a peculiar kind with an offensive odor to our forefathers, a cup of which they never partook of, without some hearty wish for another article. That wish has been fulfilled and now we drink tea in the most abundant quantities and those who are true judges of the herb assert that it has the exact flavor so agreeable to our Boston folks, and for which Uncle John got both his head and chest cracked so well in 1776, by our sturdy forefathers.

The yield of wheat this year in Indiana, is much larger than was ever reaped before in that State in one season.

For the Scientific American,

WHEELING, VA., June 23, 1848.

Mr. Editor:—The good town of Wheeling, (Western Virginia,) is now going ahead of any other on the Ohio river, taking the population into view. It certainly is an enterprising go-a-head city, and will soon form the point where the Eastern and South-western travel will meet. The Cotton Mills are now in full operation, the character of the goods manufactured there (muslins,) cannot be excelled. The extensive works of the Virginia Rolling Mills and Nail Factories, are also in operation. Machine shops, foundries, waggon and extensive wheel manufactories, have all sprung up within the last eighteen months Two daily papers are published, and the steamer's news from New York and Boston, is received and circulated by extras nearly as soon as in Baltimore. The Wheeling and Belmont Suspension Bridge is expected to be finished by next spring, under the able design and superintendence of Mr. Ellet, jr. Beside the present Telegraph from Pittsburg, another line is being erected between here and Baltimore. It is also in contemplation to make a railroad from the mouth of the river to cross into Ohio, terminating at Columbus, this will be connected or in junction to the Great Western Railway between Baltimore and the Far West. The crops from all accounts are abundant; we have had some heavy gusts during the present month, but the rain has produced a wonderful growth in vegetation, consequently the markets are on the decline. The Model Artists from your city met with little success in many parts of the West, and in Wheeling in particular. We have lectures here on all subjects by Eastern Orators, some of whom find the folks out West, not so green after all.

A SUBSCRIBER.

Subterranean Gasometer.

A singular phenomena took place lately in the township of Greenfield, Mich. Messrs. Grangers, in boring to find water to supply their saw mill, sunk a four inch hole to the depth of seventy feet, when they struck a vein, or cavity. As they withdrew the augur from the hole, to their great surprise it was followed by a violent current of air, that threw up stones as large as hens eggs, ten or fifteen feet high.

For a few moments when the hole was first opened, the air was accompanied by a stream of water, which was thrown ten or twelve feet high. The water. however, soon ceased coming, and the air gushed out with such force that the roar could be distinctly heard fifty or sixty rods distant. On touching fire to the air, it caught, and the flames flashed twenty feet high, and burning the building, containing the machinery, near which it is located.

They finally succeeded in stopping it, by forcing down blankets, and driving a spile into the hole, which was their only means of stopping the air or gas, and extinguishing the flames. For several moments after the hole was stopped, the earth trembled and shook for some distance around, as though an eruption was about to take place. The people, who by this time had gathered to the number of about a hundred, were greatly alarmed at these symptoms, and scattered with all possible rapidity, supposing that Millerism was about coming to a focus, or that they were about to be blown up sky high by an earthquake. From the time it was opened till it was thus closed, was about six hours, and the air gushed out all the time with unabated violence.

It has been opened several times since, with the same effect. The power and force of the air does not seem to diminish in the least. Messrs. Grangers are proposing to secure it with apparatus, so as to shut it off and let it out at leisure, and test its real qualities.

It is contemplated to carry this gas to Detroit, (which is only nine miles distant from Greenfield,) to light the city.

Cicero the Roman orator was one day sneered at by one of his opponents, a mean man of noble lineage, on account of his low parentage. "You are the first of your line," said the railer; "and you," rejoined Cicero, "are the last of yours."

Foreign Correspondence.

Dear Sci. Am.—The times here are propitious respecting the manufacture of machinery and steam engines, and nothing else, for there are great numbers of our working people out of employment, owing to the unsettled state of affairs on the Continent and the agitations in our Sister Island. It is to be hoped that the dark cloud which has long threatened to burst on that lovely, yet miserable spot, will soon clear away and the sunbeams of peace and plenty smile around the hearth of every honest peasant. These things can only be brought about by peaceful means.—Him who "spake as never man spake," proclaimed the doctrine of peace and love and it is a departure from this doctrine which has been the cause of all human misery. Our national debt is a millstone hung about the neck of the nation because of war. The majority of our most intelligent citizens believe that by peaceful agitation we will yet get all the reforms we want. The most clear sighted in Ireland now begin to think that this is the best way too.

Last week there was launched from the building yard of Messrs. Todd & McGregor of this city, a splendid iron steamer of 750 tons burthen, being the fifty-first iron steamer built by this firm. It is of a beautiful model and is intended to ply between Belfast, Ireland, and Liverpool, England, and is built for Messrs. Langtry & Co. of Belfast. There is one thing somewhat novel about a vessel of her class. She has only one engine, whereas all our steamers, even of less size, have two, with their cranks placed at right angles to one another. This one eschews old notions and depends alone upon one engine of 350 horse power. It is all of wrought iron with a brass piston, bore 94 inches diameter, and stroke 6½ feet, or 78 inches. Every person here, from the skill of her engineers, believes that no other vessel will surpass her in speed and accommodations, but time alone will decide this—"the best laid schemes of mice and men gang aft agee."

The steamers America and Niagara built for the Cunard line, have proved to be excellent vessels, as was confidently predicted before they were launched, and I now predict that the Europa, which has yet to breast the Atlantic wave, will surpass any other steamer of that line—she is the most splendid model that I ever beheld. The steamboats built on the Thames are fully faster than the Clyde boats, although not so well built for tear and wear. The iron trade is somewhat dull at present.

A valuable discovery has just been made in England, whereby it has been found that galvanized iron (iron coated with zinc by immersion while in a molten state) will weld perfectly as if no zinc were present, and blooms and bars have been made with a portion of zinc combined, and a beautiful silvery grain the result. This is an important discovery, as the iron made in this manner has been found to be about 7 per cent higher in strength than our best samples of wrought iron. This will be interesting to some of your metallurgists, as I have been informed that zinc is blended with some of your ores.

Yours respectfully, D. M. C

Glasgow, June 10, 1848.

Little Kindnesses.

Small acts of kindness, how pleasant and desirable do they make life! Every dark object is made light by them, and every tear of sorrow is brushed away. When the heart is sad, and despondency sits at the entrance of the door, a trifling kindness drives despair away, and makes the path of life cheerful and pleasant.—Who will refuse a kind act? It costs the giver nothing, but is invaluable to the sad and sorrowing. It raises from misery and degradation, and throws around the soul those hallowed joys that were lost in Paradise.

A Sensible Answer.

A lady who had married a man of great good nature, but a little deficient in point of understanding, was reproached by her brother in-law, who told her in derision that she had coupled herself to a fool. "So has my sister," she replied, "for no man of sense would endeavor to give a woman a mean opinion of her husband."

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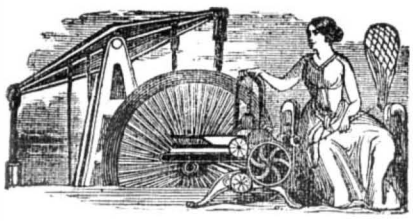


New Inventions.

Improvement in Stuffing Boxes.

We have been shown, during the last week an important improvement in packing stuffing boxes, invented and patented by Messrs. Allen & C. W. Noyes, of the Boston Railroad Company at Greenbush, Albany. The invention consists in making the box of an interior cone shape and filling the inside with concentric washers or circles of anti-friction metal. The rings or washers of anti-friction metal are made of different sizes, filling up the cone of the box so as to have a straight bore for the piston rod. As experience is the only true test of the value of any invention, we believe that a locomotive has been run on the Western Railroad with this packing for six months and this full experiment has surpassed the most sanguine expectations. Metalic packing is not a new invention, but this mode is different from all other kinds that we have ever seen.

Simple Boiler Feeder.

Mr. J. Grant, of Providence, R. I., has put into operation a very simple and cheap Boiler Feeder, so as to supersede the use of the force pump for that purpose. It is unconnected with any float so that foam does not interfere with its operations. The steam is used to force the water into the boiler from the feeder whenever it gets below a certain level. For small engines, it is very applicable and must answer a good purpose.

Novel Dredging Apparatus.

Lord Dundonnald, or him who was once Lord Cochrane, but cashiered from the British service because he was the ablest admiral of them all, and lately restored again to full command of the West India fleet, has been exercising his inventive powers in deepening the Stag Passage leading to the Great Sound, Bermuda, with great success. The contrivance is simple. Three anchors were firmly secured to a transverse spar, forming a novel marine mammoth rake. Chain guys running from the anchors to a powerful steam tug, with paddles in full play dragged the anchors along the bottom, and thus raked up large quantities of sand and mud. This plan shows that inventive minds will accomplish their object with the simplest materials at their disposal, for "this plan," says the Bermuda Gazette, "has been in operation two weeks, with most astonishing results."

The Viometer or Travelling Register.

A correspondent of the Philadelphia Ledger severely criticises the announced invention of Lieut. Stevens of the Artillery, in combining a clock with a gun carriage to register the distance of the army's marches, and says that it is more than three hundred years old, and cites from "Beekman's History of Inventions," a long list of names from 1482 to 1780, of inventors or improvers of the Viometer. The most of the names are German. Viometers are sold in great numbers in London, and the following account of them as sold there, will not be uninteresting to our readers.

The Viometer consists of a brass plate having a fixed axis placed perpendicularly to its surface with an endless screw cut on its middle part. On this is suspended a small brass frame which swings freely below. In this frame are two brass wheels turning freely and independent of the same axis, each cut with teeth on its edges bevelling towards each other, one containing 100 and the other 101 teeth. The endless screw on the fixed axis engaged in the teeth of both wheels drives them in the same direction, every revolution of the carriage wheel moving them one tooth. In 100 revolutions the wheel with 100 teeth has returned to its original position, and the other wheel is one tooth behind, and so on successively, so that the number of teeth the second wheel is behind the first will be a register of the number of hundreds of revolutions the carriage wheel has made since it started, or since the machine was set and the number of revolutions the carriage wheel has made beyond the even hundreds. Thus, suppose the zero of the second wheel to have fallen back 72 teeth and the zero of the first advanced 32, this will shew that the carriage wheel has made 7236 revolutions, and so on for any number of revolutions under 101 times 100, or 10,100, at which time both wheels will have attained their original position. Suppose the carriage wheel to be 12 feet in circumference the distance the diameter will measure is

10,100×12=121,200 feet, or 40,400 yards, nearly 23 miles.

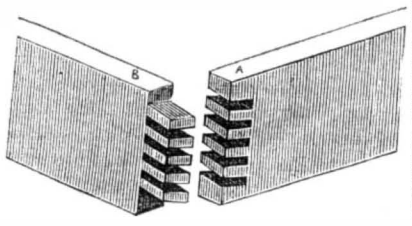
If the distance exceeds this, there is a small spring in some of the machines, which counts one for three of the complete revolutions, but this is not necessary in our opinion. The whole machine is very small, the wheels but little larger than a dollar piece. It is all enclosed in a leather case and made to buckle on, and is placed as near to the nave of the wheel as possible, so as to prevent it from receiving a centrifugal force sufficient to overcome the force of gravity.

New Hemp Brake.

Mr. W. Kelly of Newry, Ireland, has lately invented and secured by patent, an improved Hemp Brake, which our foreign exchanges speak of in very high terms. We are, however, of opinion, (from descriptions given,) that it is not equal to some invented in this country.

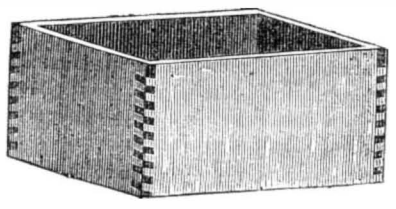
Bell's Oblique Tennon, or new Method of Dovetailing.

Fig. 1.



This is a section view of an improvement in Dovetailing invented by Mr. J. Bell, of 131st street, 4th Avenue, this city. Any joiner will immediately perceive by the above engraving the difference between this oblique tennon and mortice for jointing wooden boxes, and the old wedge tennon. He will also perceive that this method of dovetailing can be performed by machinery as easy as sawing plain boards. This section cut represents by A and B, the oblique tennons and mortices of two sides of a box ready to be matched into one another.

Fig. 2.



Is a perspective view of a box constructed by this new system, and it will be readily appreciated by any one acquainted with the art, that as soon as the bottom is attached, it will be stronger than a box constructed by the common method. We have seen a small box made in this manner, and believe that the invention is a very important and valuable one, and must take the place of the common method, as it answers the same purpose but can be performed far quicker, and therefore it has the advantage in point of economy.

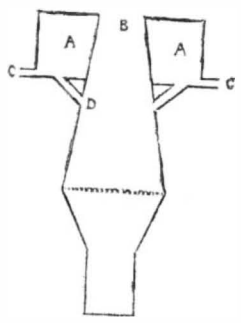
Mr. Bell has taken measures to secure his invention by patent, and it will no doubt be of much pecuniary benefit to him, and well does he deserve it, for he has invented many very useful things during his long residence in this city which he has freely given to the public.

Improvements in the Manufacture of Iron.

The employment of heat lost from the mouth of the Blast Furnace for the purpose of metallurgy has long been known. It was employed in 1814 in France. Mr. Aubertot, in the Department of Cher, employed then the flame which passed out of the blast and refining furnace in the cementation of steel, and succeeded perfectly. He afterwards passed it into the reverberating furnace and raised the temperature sufficient to heat blooms and bars, for hammering the one and drawing the other out, and finally he caused the flame to circulate through several furnaces side by side.

The advantages arising from the use of waste gas from the mouth of a blast furnace is no longer problematical. The gas as it rises through the fire room of the furnace containing from 60 to 80 per cent of the combustible effect of the fuel used, is made to pass into a chamber surrounding the upper and outer part of the fire room as represented by the following cut.

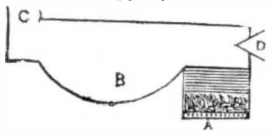
Fig. 1.



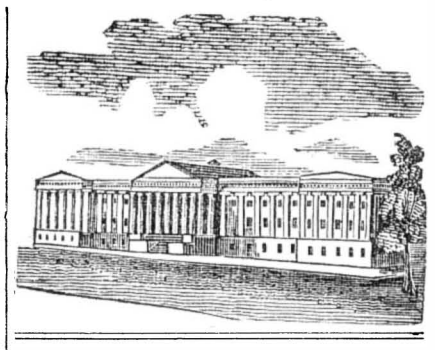
B, is the mouth of the furnace. A A, is the gas chamber surrounding the upper part of the fire room. D D, are pipes connecting the fire room and gas chamber. C C, are pipes to carry off the gas, which is drawn out by means of blowing cylinders and forced into the refining or any other furnace through a number of small orifices, alternating with other openings, through which a cold or hot air blast is thrown to keep up the combustion of the gas when once ignited. Stopcocks are used to regulate the supply of air to obtain the maximum of heat, and just sufficient air should be admitted to burn all the carbonic oxide and hydrogen contained in the gas coming from the blast furnace. M. Fabur Dufaur, superintendent of the iron works at Wasseralfingen in Wurtemburg, Germany, is the inventor of this improvement in iron manufacture, and at his iron works one million pounds of wrought iron are now turned out annually in various forms—his iron is greatly improved and the loss much reduced, in fact reduced to one fourth of the loss incurred without the gas combustion.

Of late years a modification has been introduced into the refining furnaces even when the waste gases from the blast furnace are not employed—a modification by which none of the combustible is lost. The furnace being a modification of the reverberating furnace is represented in

Fig. 2.



The fuel is placed in the grate A, and ignited by air thrown in from below the grate by a bellows, or otherwise. The air in traversing the ignited coal is first converted into carbonic acid and then into carbonic oxide, if the bed of coal be thick enough. Generally, however, the carbonic acid passes beyond the upper surface of the fuel without having undergone a change, if the blast from below has been sufficient. By this operation the chamber B, becomes heated and a mixture of carbonic acid, nitrogen and a little hydrogen passes out of the flue C. But the grand object is not to permit any carbonic oxide and hydrogen to escape combustion but to add to the heat of the furnace the heat arising from the combustion of the two gases. This is done by throwing in a blast through a number of small holes D, just above the surface of the fuel, this blast being regulated as required. By this process is recreated the maximum intensity of heat. The advantages claimed for this method of burning the fuel are first—heat diffused over a larger space heating more uniformly the metal than when it is placed in the midst of the fuel, and second, it has been found that fuel of an inferior quality can be used, as the reverberatory furnace has been heated to whiteness by the burning gas. Pig iron has been melted and puddled by this process when only a mixture of charcoal dust and earthy matter was used as a flux.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending June 27, 1848.

To Sherman Blair, of New Haven, Conn., for improvement in Sofa Beds. Patented June 27, 1848.

To A. C. Semple, of Cincinnati, Ohio, for improvement in Racks and Pinions. Patented June 27, 1848.

To Calvin Emmons, of New York City, for improvement in Planing Machines. Patented June 27, 1848.

To James C. Helme, of Wilkesbarre, Penn. for improvement in Bedstead Fastenings.—Patented June 27, 1848.

To Spencer Lewis, of Tiffin, Ohio, for improvement in Bedstead Fastenings. Patented June 27, 1848.

To Uel West and Nathan Thompson, Jr. of New York City, for improvement in Couplings in Pipes. Patented in the United States June 27, 1848. In England March 22, 1848.

To Roswell Wilson, of Halfmoon, N. Y. for improvement in Grates for Stoves. Patented June 27, 1848.

To J. A. Letellier, of Paris, France, for improvement in the Screw for raising water. Patented in the United States June 27, 1848. In France Dec. 30, 1846.

To Franklin Kellsey, of Middletown, Conn. for improvement in Door Springs. Patented June 27, 1848.

DESIGNS.

To William L. Sanderson, of Troy, N. Y. for Design for Stoves, (having assigned to Anthony Dany & Co.) Patented June 27, 1848.

To James H. Conklin, of Peekskill, N. Y. for Design for Stoves. Patented June 27, 1848.

INVENTOR'S CLAIMS.

Organ Pipes.

To David Boardman, of Mount Vernon, N. H., for improvent in Organ Pipes. Patented 18th April, 1848. Claim.—I do not confine my invention to the use of cotton cloth alone for a partition, as there are other materials which may be substituted and be made to produce a like effect. That which I claim is the employment and use of a partition of cotton cloth (or other proper equivalent) within an organ pipe, in the manner and for the purpose of improving the tone as above specified.

Sandpaper.

To Joseph G. Isham, of New York, N. Y., for improvement in Sand Paper. Patented 25th April, 1848. Claim.—Having thus pointed out the defects of the sand or polishing paper heretofore made and used, the nature of my invention and the most prominent of the advantages of my improvement, what I claim as my invention, and desire to secure by Letters Patent, is gluing or otherwise cementing sand glass, emery or other reducing or polishing surface on both sides of sheets of paper, as herein described, whereby the coating on both sides will unite and form well rounded edges, and thus produce what may be termed a reducing or polishing tool, presenting the advantages of greater cheapness and durability, and better adapted to the various kinds of work to be done, and at the same time economizing the time of the operator, as herein described.

Boot Planes.

To Albert V. Hill, & Reynolds Arnold, of Hamburgh, N. Y., for improvement in Boot Planes. Patented 11th April, 1848. Claim.—What we claim as our invention, and desire to secure by Letters Patent is the combination of the cutting plane with the feather edge plane, in the manner and for the purposes above described, forming an entirely new invention.

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NEW YORK, JULY 8, 1848.

A Subject for Discussion.

Politics seems to be a subject excluded from all mechanical associations and wisely, so far as they relate to party, but as a science, the general principles of political economy should exercise the mind and occupy a prominent place in the discussions of every association of working men. We mean those well known and acknowledged principles on which are founded our political rights and duties as citizens and members of the same community. These principles ought to fill a more prominent place than they do in the education of all classes of our people, and as this is now the week of the seventy-fourth anniversary of the Declaration of Independence, we desire to call the attention of our Mechanics to this subject.

The same law that protects the property and rights of one class, also points out the mutual relations by which the several classes depend upon one another for their general welfare and how that if any evil is done to one, it rests not there but affects others. The evils that arise in one community, sometimes affect a whole nation. A putrid carcass in one small district may spread a plague from end to end of an extensive empire. The great principles then of political economy should often be discussed in our Mechanics and other Literary Institutes, for they are truly no more than a system of national and municipal regulations which surely should be known and read of all men. No man can be an intelligent citizen without a knowledge of them, yet while few are ignorant of party politics, we regret to say that respecting the principles, (about which none need quarrel,) there is too much ignorance. A knowledge of party politics does not confer moral power but a knowledge of principles both confers moral power and gives men discretion to use it. There is no political right without a political duty and certainly we should know what our duties are. Each one of us have duties to fulfil and these can be fulfilled without party disputes. We are pointing to the Science of our government, as we certainly desire to see our Industrious working men as well acquainted with the political structure of our institutions—the principles upon which they rest, as they are with the work that daily passes through their hands. Then let the present anniversary of our National Independence incite our citizens more and more to cultivate a knowledge of our political and social duties to one another, for as it regards love of country and patriotism to her welfare and true glory, are we not all American Citizens.

Light and Vegetation.

Light has a peculiar influence upon all things here below, but especially is its effects perceived, apart from common observation, on the flowers and herbs of the field. The vegetable world in many respects resembles the animal. Life, death, decay and reproduction are properties belonging to the vegetable kingdom, and are observable in the countless varieties of branch, leaf and flower. Yet although vegetation exhibits herself in innumerable forms, her elementary constituents are indeed but few. The gases, nitrogen, oxygen, hydrogen, and carbon combined in different proportions form the different compounds which constitute the vegetable structure.—The plants derive their food from the soil and require for their existence air, heat and light. The roots drink in moisture from the soil and that moisture is impregnated with different salts conveyed to the extremities of branch and leaf through curious hollow tubes. The upper surfaces of leaves are covered with innumerable pores through which large quantities of vapor are exhaled during daylight.—A single sunflower plant, will exhale, it is computed, "13,000 grains in one day." On the other hand, there are pores on the undersides of leaves that inhale carbonic acid gas and the sap thus charged with carbonic gas and relieved of a portion of its oxygen and hydrogen serves to produce new vegetable matter and add to the thickness of the branches. If light be withheld from plants, they become unhealthy. Like the prisoner in his dungeon, they pine away and die. The reason of this is, that when the light is absent carbonic acid gas is given out and oxygen inhaled. It is owing to the carbon mingling its dark color with the yellow of the plant which produces the fine deep healthy green color, and therefore sickly plants are always pale. Grass that springs up under a board is not green, and flowers grown in a mine removed from the influence of light, are always of a pale appearance. An eminent chemist is of the opinion that the sap of plants is never green, but has a green appearance owing to a little chlorophyle reflecting green light.—There can be no doubt but the chemical action of the rays of light affecting the compositions of vegetable structure, is the cause of the varieties of color in flowers. It has been found that flowers of a yellow color contain a greater proportion of sugar, oils, gums and wax than those of other colors. Red flowers contain the greatest quantity of acids; blue, green and violet the greatest quantity of alkali. Still no data can be laid down upon these facts, as some flowers contain every variety of color and shade. In the majority of flowers the centre is yellow and therefore contains the most sugar and wax and well does the industrious bee know this as it dives into the little cell and quaffs the pellucid nectar. Watery infusions of blue flowers are changed to red by adding a very small portion of acid, and red infusions are changed to blue by adding a small portion of alkali. If a single drop of acid is put into an ounce of water, and a blue hyacinth immersed in it, the flower will soon change to a red color, and so small is the quantity of acid taken up by the flower, that it does not exceed the one hundred thousandth part of a grain. In this case the chemical influence of light acts like electricity—it composes and decomposes the substances that form the structure of the vegetable kingdom The sap of plants and flowers is singularly sensitive in photography. The juice of poppy, or infusion of Brazil wood, answer for making photographic paper. Common paper washed with a decoction of Brazil wood and exposed to light beneath an engraving gives a negative picture, thus shewing the influence of light upon vegetable substances in a wonderful clear manner. Without light the green field and the lovely flower would be unknown, but all the vegetable world presents beautiful evidences of the adaptedness and collocations of vegetation to draw out our admiration and devotion towards the great Creator—Him who is designated "Light," to bespeak his effulgent glory, and the "Rose of Sharon and "Lilly of the Valley," and cold and stoical must the heart of that man be who sees no splendor in the sun and no beauty in the flower.

Canal from the Gulf of Mexico to the Pacific.

At the Isthmus of Tehuantepec one river named Coatzocales, flows into the Gulf, and the river Chicapa flows into the Pacific. Both these rivers originate on an elevated table land near the centre of the isthmus, about 656 feet above the ocean, and the length of the route would be 200 miles, therefore we need never expect a canal to be built there; but the Isthmus of Panama can be cut and built into a splendid canal at an expense of no consequence at all, as the distance from sea to sea is only about 40 miles, and the country is traversed for nearly the whole width by the great river of Chagres and its tributaries, which are interlaced, as it were, with the streams flowing to the Pacific. The chain of mountains here sinks into extensive Savannahs and forests, with a few detached and isolated hills, and small elevations, seldom excoeding 500 feet in height. The country was surveyed in 1828, at the instance of General Bolivar, by Mr. Lloyd, an English officer, who also took the levels, and determined the difference between the two oceans to be 3½ feet, the waters of the Pacific being the highest. Mr. Lloyd's valuable papers, are deposited with the Royal Society and the Royal Geographical Society, of England. A survey of the River Chagres was also made by order of the British Admiralty. A line traced between the lakes Nicaragua and Leon, is preferable on account of the local facilities, the salubrity of the climate, the already populated character of the country, and the advantages of the two lakes, which at a small expense may be converted into harbors accessible at all times to vessels of heavy tonnage, and the late operations of the British at Nicaragua show that they have an eye to this project or a good Railroad, and it may be that while we are talking about a Railroad to Oregon or California, uncle John is jumping into the ditches.

The Croton Bridge.

At the present moment there is more originality and daring displayed in the construction of great works of art, than ever was displayed in any other age of the world. Bridge building has always been esteemed as the most difficult part of engineering science, requiring the greatest scientific skill, invention, genius and boldness. In this department the moderns far excel the ancients, taking into consideration all the famous aqueducts ever built in Egypt, Greece or Rome. What bridge of old can compare with the great Croton Aqueduct Bridge, now in the course of erection over the Harlem River in this city. It is 1400 feet long, having 15 lofty arches, and being no less than 100 feet from the water level to the crown of the arch. In gazing upon the majestic parapets the mind is impressed with a deep feeling of awe and becomes fully impressed with the Scriptural definition of man, that although "he is crushed before the moth," yet he is "created only a little lower than the angels," and endowed with wisdom and power from on high. The top of the bridge is 21 feet in width with a capacious channel way in the centre, with two lines of huge iron pipes which supply this empire city with an abundance of excellent water. This great work is the more astonishing when we take into consideration that it is a conduit for water brought from a distance of 40 miles to supply a city teeming with 400,000 inhabitants and reared by them on a spot which less than three hundred years ago was covered with the primeval forest and untrod by any save the foot of the red and wandering Indian. This great work is an evidence of what we have more than once asserted "that New York is yet to be the centre of the commercial world,"—it is now second only to London, and "there are more who worship the rising than the setting sun."

Manufactures in the South.

The question has been with a great number of planters in the South, "whether shall the cotton field be carried to the factory or the factory to the cotton field." The June number of the Western Journal contains a long and ably written article to prove the necessity and utility of the South and South-western States becoming manufacturing as well as agricultural. Southern States, especially Georgia, manufacture their own coarse cotton goods, and they are of superior quality, and there can be no doubt that at no distant day the cotton manufacture will be engrossed by the cotton growing States. In manufacturing upon the plantation, the whole carriage of the material is at least saved and this is not a little. The question is therefore settled that the loom should come to the cotton, for Georgia has now 32 factories and more in the course of construction. We lately conversed with a gentleman from Florida, who informed us that there was a factory near Pensacola that turned out most splendid coarse goods—what are called negro goods—which can suffice for southern clothing for at least nine months in the year. Maryland has long been a manufacturing State. Old Virginia is now grasping the spinning jenny and power loom and so is South Carolina, and not a bit of chivalry sacrificed, but rather stimulated. We trust, however, that with the progress of manufactures in the South, the cold-hearted greed of gain will not banish the ancient pride of noble hospitality.

Marble of fine quality has been quarried in Floyd county, near the Coosa river, Georgia.

Steam Engines and Price and Power.

The following letter, in answer to some enquiries made by us of Mr. Burdon, a very extensive builder of engines from 5 to 50 horse power, will be useful information to many of our readers, as we have received quite a number of communications on the subject. We would say that the delivery of almost all machinery built in this city extends only to this port, but good mechanics can be found to superintend the machinery.

BROOKLYN, N. Y., June 24, 1848.

Dear Sir:—I can furnish a 12 horse power engine sufficient to run a pair of mill stones, an upright and a circular saw.

The general calculation is, that what we call a country run of stones, takes a 6 horse power. I have sold a number of 5 horse power engines to drive a pair of mill stones 5 feet diameter, and I have sold 50 horse powers for the same purpose. The first turns out 18 barrels of flour per 24 hours, and the other 100 barrels in the same time. That is also the case with a saw mill, a 5 or a 50 horse power could be used to drive one gate; it depends on the number of cuts per minute, how much the feed is and the length of stroke of the saw, or in other words, it will take power according to the amount of work you put through it but I think to do a country business a 12 horse power engine would be large enough.—That size engine complete with boiler, pipe heater, furnace front, &c. &c., will cost delivered on board vessel in this port, $1300 cash.

A pair of stones will cost about	$90
The iron work for spindles, wheels, pulleys, steps, &c. : : :	175
The iron work for the saw mill,	225
Leather bands for both mills, :	174

Yours, &c. WM. BURDON.

The Magnetic Telegraph.

There is much dissatisfaction felt by all our newspapers, at the charges made by the Telegraph, and there is a strong feeling to see the rates reduced. This cannot be done but by opposition, and it is to be hoped that new lines may be started that will supersede the old both in management and economy. It sometimes happens that the Telegraph is no great traveller after all, or else it is owing to its management, for we know of a message that was sent from this city to Wheeling, Va. two weeks ago, which took four and a half days to reach its destination.

The Albany Journal says, "There is a new patent law pending in Congress. It was smuggled into that body, and if passed, it will effectually cut off all improvements upon any article now patented. Its principal design is said to be to secure Professor Morse in the full monopoly of Heaven's electricity."

Turpentine.

One hundred acres of well timbered land in Geo., yields about three hundred barrels annually. The trees afford to be chipped for five or six seasons.

Scientific American—Bound Volumes.

The second volume of the Scientific American, bound in a superb manner, containing 416 pages choice reading matter, a list of all the patents granted at the United States Patent Office during the year, and illustrated with over 300 beautiful descriptive engravings of new and improved machines, for sale at this office—Price $2,75. The volume may also be had in sheets, in suitable form for mailing—at $2.

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Arts, Manufactures and Machinery.

Exerting forces too large for human power —Hydraulic Press.—Riveting boilers. —Wetting Bank Note Paper.—Registering Machines.—Machine for ascertaining the vigilance of a Watchman.

It requires some skill and a considerable apparatus to enable many men to exert their whole force at a given point, and when this number amounts to hundreds and thousands additional difficulties present themselves. If ten thousand men were hired to act simultaneously, it would be exceedingly difficult to discover whether each exerted his whole force and consequently, to be assured that each man exerted the force for which he was paid. And if still larger bodies of men or animals were necessary, not only would the difficulty of directing them become much greater, but the expense would increase from the necessity of transporting food for their subsistence.

In all our Manufactories numerous instances occur of the application of the power of steam to overcome resistances which it would require far greater expense to surmount by means of animal labor. The twisting of the largest cables, the rolling, hammering, and cutting large masses of iron, the draining of mines, all require enormous exertions of physical force continued for considerable periods of time. Other means are had recourse to when the force required is great, and the space through which it is to act is small. The Hydraulic Press of Bramah can, by the exertion of one man, produce a pressure of fifteen hundred atmospheres, and with such an instrument a cylinder of wrought iron three inches thick has been burst. In rivetting together the iron plates out of which steam-engine boilers are made, it is necessary to produce as close a joint as possible. This is accomplished by using the rivets red hot; and while they are in that state the two plates of iron are rivetted together, and the contraction which the rivet undergoes in cooling draws them together with a force which is limited only by the tenacity of the iron of which the rivet itself is made.

It is not alone in the greater operations of the Engineer or the Manufacturer, that those vast powers which Man has called into action, in availing himself of the agency of steam are fully developed. Wherever the individual operation, demanding little force for its own performance, is to be multiplied in almost endless repetition, commensurate power is required. It is the same giant arm that twists the largest cable, that spins from the cotton plant an "almost gossamer thread." Obedient to the hand which called into action its resistless powers, it contends with the ocean and the storm, and rides triumphant through dangers and difficulties unattempted by the older modes of navigation. It is the same engine that, in its more regulated action weaves the canvas it may one day supersede, and, with almost fairy fingers, entwines the meshes of the most delicate fabric that adorns the female form.

The process of printing on silver paper which is necessary for bank-notes, is attended with some inconvenience, from the necessity of damping the paper previously to taking the impression It was difficult to do this uniformly; and in the old process of dipping a parcel of several sheets together into a vessel of water, the outside sheets, getting much more wet than the others, were very apt to be torn. A method has been adopted at the Bank of Ireland which obviates this inconvenience. The whole quantity of paper to be damped is placed in a close vessel from which the air is exhausted; water is then admitted and every leaf is complely wetted; the paper is then removed to a press, and all the superficial matter pressed out.

One of the singular advantages we derive from Machinery is in the check which it affords against the inattention, or the idleness of human agents. Few occupations are more wearisome than counting a series of repetitions of the same fact, the number of paces we walk affords a tolerably good measure of distance passed over, but the value of this is much enhanced by possessing an instrument, the Pedometer, which will count for us the number we have made. An instrument similar in its object, but different in its construction, has been used for counting the number of strokes made in a steam engine, and the number of coins that are struck in a press.

Another instrument for registering is used in some establishments for calendering and embossing. Many hundred thousand yards of calicoes and stuffs pass weekly through these operations, and as the amount paid for the process is small, the time spent in measuring them would bear a considerable proportion to the profit. A machine has been contrived for measuring and registering the length of the goods as they pass rapidly through the hands of the operator, and all chance of erroneous counting is thus avoided.

Perhaps the most useful contrivance of this kind, is one for ascertaining the vigilance of a watchman. It is a piece of Mechanism connected with a clock placed in an apartment to which the watchman has not access, but he is ordered to pull a string situated in a certain part of his round once in every hour. The instrument, aptly called a "*tell-tale*," will inform the owner whether the man has missed any, and what hours during the night.

Indian Corn in England.

The European News says: "Mr. H. Candsdell, a scientific American Agriculturist, has arrived here from Wisconsin, where he has been making many experiments with numer ous varieties of Indian Corn, in a climate the mean temperature of which, during the summer months, varies very little from that of England. In the hope of being able to raise a crop here, he has brought over one hundred varieties, and Prince Albert has given permission for the various experiments to be made on his domain at Windsor. Mr. Candsdell says, admitting the grain should become acclimated, it will be possible for a poor man to raise on *one rood* of land, from fifteen to twenty bushels of corn, in addition to, and without in any way interfering with his ordinary growth of potatoes, cabbages or beans beside finding nearly enough fodder to keep a cow in winter. Mr. Candsdell also says, the usual plan of the farmers in America is to plant an under crop of saccharine pumpkin, of which twenty tons an acre is frequently raised, (in addition to the usual crop of maize,) and which is considered to contain a larger amount of fattening matter than either Swedes or mangold worzel. Should the issue of the experiments be successful, it will be of incalculable benefit to farmers and the laboring classes in England, and particularly in Ireland, and will be the greatest agricultural achievement since the introduction of the potato."

Curious Pearl Fishing Story.

The New York Sun relates the following story of the Pearl fishing, which happened lately at the Panama.

A French adventurer had engaged Herman Swartsein, a wealthy and ingenious mechanic of Hamburg, to prepare a kind of garment for pearl fishing, which would enable the wearer to remain for hours together at the bottom of the sea. Swartsein, and both his brothers, who were men of means, entered heartily into the project of fitting out a vessel for pearl fishing, and with these new diving dresses, they all started for the distant pearl fishing banks of Panama. Instead of going to the old explored banks, they sought new ground in deeper water. There, moving about at their ease in their protecting shells, they gathered pearl oysters of astonishing size, and in unheard of quantities. Fishes of every size and form played about, as they pursued their labors, but they met with nothing that seemed dangerous.

The most remarkable and important of all their discoveries was the last They came to a large rock covered and crowded with large oysters, that yielded an incredible quantity of pearls, of rare size and lustre. This rock was seamed with a rift, and firmly bedded in this hollow, lay sound and secure the hull of a large ship, of curious and ancient model. The outside was crusted over, like the rock into which it was jammed, with large pearl oysters, but though most of the deck was gone, the cargo remained almost undisturbed, packed in every crevice with the deposite of fine sand. Here they dug out vast treasures, in the shape of images, which proved to be of fine gold. They were employed in disinterring this unexpected wealth and in the care of their still more precious acquisition in pearls, when disease commenced its ravages, and a fatal storm put an end to their labors.

The Soap Tree.

We noticed some time since, the use in California of the soap plant. From the author of "A Campaign in New Mexico," we get the following particulars respecting it. He says: "We first met, on this part of the road, with the species of palm called by us soap-weed, from the fact that the Mexicans use its root as a substitute for soap, for which it answers very well. Indeed, it is considered superior to it for the washing of woolens. I believe it is rightly named the lechuguilla. This singular shrub, which is to be met with on the prairies, but where it never grows to any considerable size, consists of a trunk very pithy, surmounted by a fine head of stiff leaves, each of which is about two feet and a half in length, and armed at the end with a long thorn. The leaves project from this stalk on all sides, and set as close as possible and are of a dark green color. The flower is white and very pretty. As each year's foliage decays, it drops down against the trunk, of a light brown color. These dry leaves, when fire is applied, flash up like gunpowder, and burn with a bright light. Our night marches could be marked by their flames, which, as the nights were cold (although the days were comfortable) were cheering. I have been thus careful in describing this plant for several reasons; one is, its many uses,—of the leaves, the natives make their hats; also when dressed like hemp, it is formed into ropes and sacks, looking like the material known as Manilla hemp, though coarser. These plants have a singularly provoking quality; being from two to eight feet in height they will assume to the eye in the twilight the most deceptive forms. To the sentinel they will appear as forms of men; and many an unconscious soap weed has run the chance of a sentry's shot from not answering the challenge "Who goes there?" If your mule or horse has strayed from camp, and you start to hunt for him in the grey of the morning, you are sure to be led first in one direction, and then in another, by one of these shrubs which from a short distance, has taken the form of your animal. Time after time you may have been thus deceived, yet never seeming to learn experience from a soap-weed."

Hyena.

Dr. Sparman tells a curious story of a hyena, which was told him at the Cape of Good Hope. One night the soldiers had a feast near the Cape, when one of them, who was a trumpeter, drank so much that he could not stand up. His companions not wanting him in the room with them, carried him out of doors and laid him down by the side of the house, to get cool and sober. The trumpeter laid there, and went to sleep, when a hyena came along, and thinking him dead, began to carry him away, so as to make a meal of him without being disturbed. It was sometime before the man awoke, so as to know the danger of his situation. When he did so, he found himself on the back of the Hyena, who was making off towards the mountain with him as fast as possible. Being horror struck at finding himself in the power of the ferocious beast, his fear brought him to his senses, and seizing his trumpet which hung about his neck, he sounded an alarm. The beast thinking he had only a dead man, was as much frightened at the sound of the trumpet, as the man was at his situation, so that dropping his prey, they scampered away from each other as fast as possible. It is not probable that any other man but a trumpeter would have escaped so easily.

An Agent for a Cotton Factory in the South writes to some applicants at the North: "This place is so healthy that if you were here and wanted to die, you must move into another section."

The Town of Singapore.

From the anchorage, the town of Singapore has a very pleasing appearance. Most of the public buildings, as well as some of the principal merchants houses, face the sea. The church is also close to the beach, to allow the congregation the benefit of the sea breezes. It has no architectural beauty to recommend it, being a plain building with a spiral steeple, surmounted by a cross. The interior is fitted up with more regard to neatness than elegance. It has an organ, and is supplied with a host of young choristers. Between the beach and Government Hill is a delightful upland, which is generally attended by all the beauty and fashion of Singapore in the cool of the evening. A canal or small river divides the town in two parts. On the western side of it, stand all the stone houses of the merchants, and it is here that all commercial business is transacted. It is densely populated with Armenians, Jews, Chinese and people from every part of India; each nation residing in its own quarter, in the houses peculiar to and characteristic of their country. Indeed, one of the first things that strikes the stranger in Singapore is the variety of costume, Chinamen, Malays, and Indians, Armenians, and Jews, all mingle together in every variety of picturesque costume, giving you an idea of a carnival. The palanquins resemble an omnibus on a small scale; they are drawn on four wheels, have a door on either side, and seats for four peeple. They are very high, and drawn by one horse, The conductors, however, are not perched up on high, but run by the side of the horse, as do all the Syces in India. There are two hotels the proprietors of which are of course rivals. One is kept by an Englishman, the other by a Frenchman; both are equally attentive, but the Frenchman's house has the preference, in consequence of its superior locality, facing the esplanade and looking upon the sea. The governor's house is situated on the summit, about a quarter of a mile from the beach. From it you have a bird's eye view of the whole town, and also of the whole country in the interior for some distance. From this eminence the town has a very picturesque appearance; the houses on the east side of the river (the May Fair of Singapore) are built apart, and surrounded by pretty gardens, and lawns; beyond this you have the roads and the sea studded with every variety of vessels and the Island of Blinting rises from sea in the distance. The interior is not without beauty; the eye ranges over a vast expanse of grove and forest, interspersed with plantations of nutmegs, cinnamon, cloves, and sugar canes, and from which a most delightful perfume is brought by the breeze, while here and there white houses may be perceived, looking like mere spots in the dark foliage by which they are surrounded. It is surprising, when we reflect how short a space of time has passed since this settlement was first made, how such a mass of building, and such a concourse of people can have been collected.—*Borneo and the Indian Archipelago by Frank Marryatt.*

Labor Lost.

A story is told (says the Sandersville Georgian) of a respectable farmer of this State, who never took a newspaper in his life, and with whom the agent of a telegraph company staid all night, and to whom he explained for an hour or more the whole operation of the mysterious wires. When he had, as he thought, effectually enlightened his host on the subject, he was met by the following query from the farmer:

"How many bales of cotton will it carry to market?"

"About forty!" was the answer of the discomfited superintendant as he retired from the premises.

A Rebuke.

A young lady became so much dissatisfied with a person to whom she was engaged to be married, that she dismissed him. In revenge, he threatened to publish her letters to him. "Very well," replied the lady, "I have no reason to be ashamed of any part of my letters, except the address."

A Western paper advertises "pocket grindtones," for sale.

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TO CORRESPONDENTS.

"D N. of N. Y."—Planing machines with stationary irons have been long known and used, and always considered inferior. You may have some new arrangement that removes objections, but iron planing machines have stationary cutters, the work being carried forward on a moveable bed or slide.

"J. P. of N. Y."—Your method of applying the water to your wheel is different from any that we have seen and we will be glad to hear the result of your experiments. The plan strikes us favorably.

"A. W. McP. of Tenn."—Address Mr. Howe, Springfield, Mass., or Mr. Thayer, of the same place. You will from either of them get the desired information about the Truss Bridges.

"T. P. S. of Pine Creek."—A. has no more right over territory for which he has already sold the original patent. If he would attempt to sell the original again in combination by merely adding the improvement, suit must be commenced against him for infringement of the original. It would never do to be otherwise. The original cannot be infringed upon by all the improvements or knackery of that kind in the world.

"D. M. of N. Y."—You will perceive that it is not possible for us to give you all the information you want. It would require a volume nearly to give a perfect and full description. Emery is used for the primary polishing of the tools you speak of, such as saws &c., and the fine polishing is completed on fine instruments with Tripoli. You can find these stuffs at all the Druggists. Put the emery on a hone or cylinder with glue and dry it, and use the tripoli with a soft hone and fine shamoy leather.

"S. W. of N. Y."—Dip the ends of the staves of your trunk in boiling pitch when you are putting the separate parts together, and wash the whole trunk with a solution of the sulphate of copper, and after this it would be well to surround it all with charcoal dust. This you will find to be an excellent plan and cheap in the end.

"S. M. of Mass."—We have answered you by mail.

"W. S. of Vt."—The iron stones are not so very good, although a good sale is obtained for them.

"C. L. of Conn"—Your letter has indeed surprised us, for the Patent Agent you refer to has been exceedingly fair to us. He told us what he wrote to you, (but which it seems was very different from what he *did write*.) We, however, never speak evil of others—we are conscious in our own integrity, and this is well known. As it regards the publishing an invention in the Scientific American, we positively assert that it is the best plan to bring an invention into notice. We would refer to West & Thompson, the inventors of the Clasp Coupling Joint, Mr. Hartson, whose Lathe we published, and a number of other respectable persons. There are many who endeavor to gain a reputation by trying to defame others—such characters are despicable and the letter you received conveyed the same impression we perceive to your candid mind.

"L. V. of Tenn."—Get an engraving of your machine published; it will bring it before the public. There are many good inventions worthless [illegible] world, because not made known thr[illegible]he public Press, the only true medium [illegible] spreading abroad such information.

"S. M. of Mass.," "T. J. of N. Y." and "D. C. T. of N. Y." We have answered by mail.

Death of the Submarine Armor Inventor.

Capt. W. H. Taylor, the inventor of the celebrated Submarine Armor, experiments with which, in the United States Navy, have excited so much attention latterly, we regret to announce has departed this life. He died on Monday morning of last week, in the 42nd year of his age. Capt. Taylor belonged to Newark, N. J., but formerly resided in Newbern, N. C.

Manufacture of Glass.

We learn that the stock of a Company for the manufacture of glassware has lately been subscribed by the enterprising citizens of Falmouth, Mass. The materials for the buildings have already been procured, and the works will be put up and set in operation without delay. The position of Falmouth is in many respects very favorable for the prosecution of this branch of our manufactures, and we hope the projectors will reap an abundant reward.

The Water Cure Journal.

This is a new periodical, to be published monthly by those enterprising publishers of cheap and useful works, Fowler and Wells, Clinton Hall, this city. Its title is indicative of its objects, and of them there is no doubt. The cold water cure will yet supersede the old barbarous, bleeding systems of "doing evil that good might come." It is edited by J. Shew, M. D. and the first number is an able and excellent one.

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I have made application for a patent on a machine for turning irregular forms, such as lasts, spokes, &c.: this is to notify all persons who infringe on said machine or right, by making or using, or otherwise, that they will be dealt with according to law.

ALLEN GOODMAN.

Dana, Mass., July, 3, 1848. jy8 4t*

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THE Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and BETTER WORK with a less expenditure of power than any other Willow; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. It is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operating the machine in any peculiar or difficult situation. EDMUND BACON,

Superintendent Quinebaug Manufacturing Co.
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Ballard's Improved Jack Screw.

PATENTED.

THE advantages of this Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires,

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,

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THE Subscriber continues to manufacture his Premium Letter Presses, at Worcester, Mass., and respectfully informs his friends and the trade generally, that he keeps constantly on hand a large assortment, which he offers for sale at reduced prices. Orders by mail will be promptly attended to

GEO. C. TAFT,
Worcester, Mass., April 11, 1848. a22 3m

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THE undersigned are manufacturing and have now in operation, a machine for **Dressing Rived Staves,** which will dress 126 hogshead or 170 barrel staves per hour, with ONE HORSE POWER, and with TWO HORSES WILL DOUBLE THE NUMBER.

It will dress CROOKED and WINDING staves to perfection, and leave the full thickness on those with thin edge, a desideratum worthy of attention.

The machine is simple, compact and durable, and has received the approval of every practical Cooper that has witnessed its operations. We warrant it to perform FULLY EQUAL to our representation and shall be pleased to exhibit it to all who may favor us with a call. For further description and terms, apply to

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Lap welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

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Manufacturer of Machines for Working
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On a new and improved Plan.

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Woodstock, Vt., April 17, 1848. a22 3m*

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Author of the "Practical Treatise on Dyeing and Calico Printing," "Pastoral Life and Manufactures of the Ancients," "Wonders of Nature and Art," &c. Messrs. Harper & Brothers, the publishers of the two first named works have already paid us nearly $3,000 on the copyrights. jy1 3m*

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Consulting Engineers and Counsellors for Patentees.

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To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information concerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

Machinery.

PERSONS residing in any part of the United States who are in want of Machines Engines, Lathes, OR ANY DESCRIPTION OF MACHINERY, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long acperience in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care. MUNN & CO. a15

Important to the Public.

IT must not only be important, but interesting to the public to know at what establishment in New York Hats or Caps of the best quality and latest style can be purchased at the cheapest price The place is Knox's, where may be found every variety of a Hat from a shilling Palm Leaf to a Five Dollar Beaver, or a Cap from a two shilling oil cloth to a beautiful new style cloth for $1.50.

Knox's is THE place—128 Fulton street. m20 3m

TALBOT'S PATENT REVOLVING BLIND HINGE.

Important to Builders and others.

THESE Hinges are for opening, closing, locking and completely regulating the blind upon the interior of the house without raising the sash. They are adapted to any kind of house, or style of finish. All communications, whether for the purchase of the article, or of Town, County or State rights, addressed to the subscriber, or to J. W. Ingell & Co., Taunton, Mass., will be promptly and satisfactorily attended to.

j3 tf L. T. TALBOT, Taunton, Mass.

PREMIUM SLIDE LATHE.

THE subscriber is constantly building his improved Lathes of all sizes, from 7 to 30 feet long, and can execute orders at short notice.

JAMES T. PERKINS,
Hudson Machine Shop and Iron Works,
m11 Hudson, N. Y.

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For the Scientific American.

Lac Scarlet.

The famous purple of Tyre was said to be dyed from the blood of a shell fish found in the Mediterranean. If so, the art has long since been lost. A small insect named Kermes, supplied the place of the Tyrian purple until the discovery of America, which brought to light the cochineal insect, and a color is dyed by it far transcending all the ancient colors of oriental tale. From the great price of cochineal, however, it is a dear color at best to dye, hence many substances as substitutes for it have been tried, but none with so much success as the Lac—a halt animal and half gum, very abundant in the East Indies and sold at a low price in comparison with cochineal. It is of a bluish color and sold in a powder at the Druggists for about 25 cents or less per pound. Four ounces will dye a red on a pound of woolen goods, as follows. The yarn or wool must be perfectly free from dirt and must be white. The lac in the proportion of two pounds to ten pounds of goods is steeped in weak muriatic acid or the nitro muriate of tin for about 6 hours, when the lac will be found to be perfectly dissolved and of a red color. It is not possible to dissolve or melt it in water so as to make it give out or impart to the water its coloring matter without an acid. When the lac is thus dissolved, the dye kettle capable of holding the cloth or yarn should be boiling and the dissolved lac along with one pound four ounces of tartar put into it with nearly a pint of the nitro muriate of tin. After these have boiled for a few moments, the goods are loosely and carefully entered and boiled for one hour, when a fine red and as fast as cochineal, will have been imparted to the cloth. For coarse goods we recommend lac in preference to cochineal, but for fine goods and light shades, such as pinks, cochineal is the best.

By the above receipt any person may dye a lac red. It is easy dyed and quickly, far more so than by madder. Cochineal scarlet is dyed exactly like the lac red, only a little quercitron bark liquor is added to the dye boiler to produce a scarlet. One ounce and a quarter of ground cochineal will dye a very deep red or scarlet. Two ounces of tartar are allowed for every ounce of cochineal—less will do, however. If no yellow is used in the dye kettle to make a scarlet color, the red after it is dyed may be made a deep crimson, by handling the goods in warm water and soda ley.—The lac red can even be *blued*, as it is technically termed, just by hot soda or pearlash liquor, to a deep and beautiful violet. The soda ley must not be too strong and the goods must be handled for a long time, for a strong alkali not only injures the color but the fabric of the cloth, or fibre of woolen yarn. A beautiful pink can be dyed on cotton with cochineal, but as this color is known but to few and is not now in the field, we need not describe it at present. Lac is not used in the cotton or silk dyeing. Some use a small quantity of sumac in the lac dye kettle, they believing that it makes the color more permanent, but we do not approve of sumac in any manner being employed either for silk or wool.

For the Scientific American.

Varnish for Wood Patterns.

The most simple varnish, combined with adaptation, is the following :—1 quart of alcohol and a quarter of a pound of gum shellac, this put into a bottle and when wanted for use mix up a little lamp black about the thickness of cream and varnish the pattern over, rubbing it into the grain of the wood, until a sllght friction produces a polish : this varnish serves two purposes, it makes a smooth surface on the pattern, making it more easily drawn from the sand, and secondly fills up all pores or worm holes that may be in the wood, consequently a cleaner, smoother casting is produced. The tendency of rubbing patterns with with oil and lampblack is to open the grain and pores and produce those rough castings which require both labor and expense to polish.

PREPARATION OF GLUE.

Some of the finest of glue is destroyed of its value and proper utility from the manner in which it is dissolved. The cakes should be put into a coarse piece of cloth and hammered into small pieces, then immersed in clear water, and afterwards put into the cup or pot which sits in the kettle, if dissolved with boiling water a regular fire should be kept. In this condition it should remain two days at least, until it assumes a thick glutty appearance. Many consider it fit for use when simply dissolved, and then use it, hence so many broken joints and veneerings, and delays and stoppages in public works, &c. By adding about one teaspoonful of ground rosin to a common sized kettle of glue the cohesive qualities of the glue will be improved, and less liable to be affected by dampness.

EXPERIENCE

Copying Engravings.

Take a piece of paper, dip it in a weak solution of starch, leave it to dry, and then moisten it with weak sulphuric acid. Afterwards take an engraving, put it over the vapor of iodine, and leave it there for the space of about five minntes, by which time the iodine will have fixed itself on every part that is black. Then take this engraving, apply it to the sheet of paper, press it for a minute or two, and the engraving is transferred. If this was the whole of the discovery, it would not be very important; but if the thing can be done on paper, it can be done on steel. copper, and silver, and here is a ready means of engraving. If you want to engrave on copper or silver, put your engraving over iodine fumes, and then place it on the plate, If it is copper, put it over the fumes of hartshorn or ammonia, wash it, and the engraving is produced. If it is silver, proceed as if for daguerreotype, holding it over the vapor of mercury, and the engraving is produced; or, put the engraving over the fumes of orpiment for a few seconds, place it on a plate of copper, press it, and the engraving will sink into it.

Manufacture of Marbles.

Mr. Chambers in a recent account of a summer tour in Germany, gives a description of marble making in Salzburg, an ancient town most romantically located in a vale of the river Salza, in Germany, after speaking of the machinery for sawing marble blocks for statues, columns, &c., carried by a stream which dashes from a very lofty alpine height, says:—

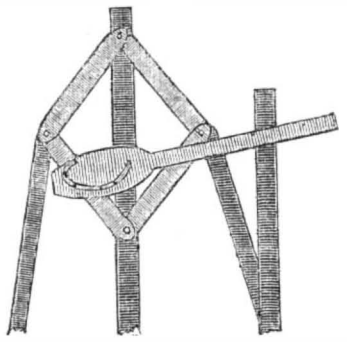
At a little distance, and higher up the hill within the recesses of a most picturesque ravine, we were shown a more novel and curious operation; this was the making of boys' marbles, and a more simple process can hardly be conceived. Small pieces of marble being put into a peculiarly-shaped stone trough or dish, a top of the same material, fitting into certain grooves, is made to whirl about by little streamlets led from the main torrent, and the marbles are soon ground into a spherical form. There were about twenty of these little spluttering mills, one above another on the stream, so that the scene was busy and amusing. At a glance, we were let into the secret of cheap pebble-grinding in Germany. No expense whatever had been incurred in constructing the mills; the apparatus was of the homeliest kind: the sluices on the impetuous streamlets were each nothing more than a turf; the raw material came out of the hill side; and the superintendant of works was a female, who probably considered herself well off at a remuneration of two pence per day. And from this primitive manufactory, boys' marbles are sent in vast numbers all over the world.

Flourine.

Flourine is laid down in all the principal chemical works as a gas of a yellowish brown color, with the specific gravity of 1289, air being 1000, is a negative electric, and ranks with Chlorine, Bromine and Iodine, according to universal opinion, and also unites with hydrogen to form an acid, which is the only acid that forms the peculiar property of dissolving glass.

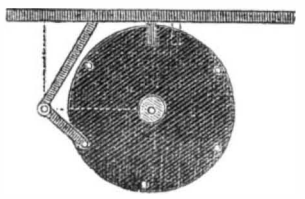
MECHANICAL MOVEMENTS.

Working Ship Pump.



This is an arrangement proposed at one time by an Englishman named Noble, to work ship pumps. The perpendicular centre being connected with the piston rod and the lever from the left acting on the combination of levers forming the square at the top. It was a clumsy contrivance, founded on the notion that levers create power.

Circular and Rectilinear Motion.



This cut exhibits a plan whereby the revolutions of the central wheel will produce, by means of the projections on its surface, either rectilinear motion in the shaft supported by friction pullies above, or circular motion by its action on the crank to the left.

Straw for Bonnets.

Directions for curing straw, to adapt it for the manufacture of straw bonnets, hats, &c.,—"Cut wheat or rye straw while in full blossom, or as the blossoms begin to fall. Scald it in a few hours after it is cut (the head being first cut off,) in boiling water about a quarter of a minute, then spread and dry it in the sun.—Take care that neither rain or dew falls upon it. It will cure in three days sunshine. Then keep it in a dry place." To split the straw after it is properly cured, so as to reduce it to a proper texture, it is only necessary to fit the point of a penknife in a piece of board, leaving about the eighth or a fourth of an inch above the board, then pulling the straw against it.—Straw of any size can be made.

Diamonds.

The diamond is chiefly found in the provinces of Golconda, and Visiapour, and also in that of Bengal. Raolconda, in Visiapour, and Gandicotta, are famed for their mines, as is Coulour in Galconda. The diamond is generally found in the narrow crevices of rocks, loose, and never adherent to the fixed stratum. The miners, with long iron rods, which have hooks at the ends, pick out the contents between the fissures, and wash them in tubs, in order to extricate the diamonds. In Coulour they dig on a large plain, the depth of ten or fourteen feet, forty thousand persons are employed; the men to dig, and the women and children to carry the earth to the places where it is to be deposited till the search is made.

Cement for Copper Boilers.

A cement very useful for the purpose of securing the edges and rivets in copper boilers, to mend leaks from joints, &c. It is simply bullocks blood thickened with finely powdered quicklime. It must be used as soon as mixed, as it rapidly gets hard. It is extremely cheap and very durable, and is suited for many purposes where a strong cement is required. It is frequently called blood cement.

The best concrete plaster floor that we ever saw, was made of lime, gravel, and bullocks blood. There is no question about its hardness and durability, while its surface by rubbing can be made perfectly smooth and glassy.

Platinizing by the Moist Way.

Manufacturing and operative chemists will find it valuable in order to produce a covering of platina for their copper. The experiment succeeds best when we make use of a dilute solution of the double chloride of soda and platina. Three immersions suffice, but between each immersion it is necessary to dry the linen, rubbing rather briskly, after which it must be cleaned with levigated chalk before re-immersion. When copper has been gilded in the moist way, the gilt surface is not a beautiful tint, but if the copper be previously covered with a pellicle (thin coat) of platina, a very beautiful gold surface may be produced.

Live Fence.

The Osage Orange is said to make an excellent fence and will grow 30 and 40 feet high, and is hardy enough to stand the northern climate. The mode of cultivation recommended is to sow the seed, previously soaked four or five days, in drills, the seeds three inches apart, the rows three feet, in corn planting season, and in ground suitably prepared for that crop; and like it, kept clean from weeds. The first season they will grow some two feet, and the succeeding spring they may be set out where desired in a mellow soil; each plant cut down to within two inches of the ground. Each stock is thus made to put out several shoots, which may be trained in any direction or permitted to grow erect. Frequent heading down will make it compact and solid; and in four or five years will form a sufficient barrier against any kind of depredation. The sharp thorns which cover the limbs will prevent cattle from disturbing it in any way.—Cultivated as a tree, it grows handsomely, bearing a rich green leaf, and fruit nearly similar to the Florida Orange.

To Find the Pressure of Air.

Multiply the pressure of air, say 15 lbs. on the square inch, by the number of volumes required, then deduct one volume for the circumambient atmosphere, or multiply 15 lbs. by one less than the number of volumes or atmospheres required.

Arseniate of Copper.

It occurs in beautiful blue crystals. It melts before the blow pipe, exhaling fumes of a garlic odor, and it affords metalic globules when in contact with charcoal.

Pure water has been obtained at Charleston, S. C. by means of the Artesian well, at the distance of sixty from the surface of the earth.

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